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| THE NATH LAW GROUP 112 South West Street Alexandria, VA 22314 | | | | ZHENG, LOIS L |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/579,550 | LEUCHTE, JURGEN | |
| | Examiner | Art Unit | |
| | LOIS ZHENG | 1793 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 11 March 2009.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,4-13 and 17-30 is/are pending in the application.

4a) Of the above claim(s) 21-30 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,4-13 and 17-20 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Status of Claims

1. Claims 1, 4-12 and 16-17 are amended in view of applicant's amendment filed 11 March 2009. Claims 2-3, 14-15 and 19 are canceled. Claims 21-30 remain withdrawn from consideration.

However, current claims 16-18 does not correspond to previous version of claims 16-18 filed 16 May 2006. Current claims 16-18 correspond to claims 17-19 in the previously version of the claims filed 16 May 2006. Therefore, the examiner considers this claim mismatch to be a typographical error. **Current claims 16-18 are renumbered as claims 17-19.**

Therefore, claims 1, 4-13 and 17-20 are currently under examination.

Status of Previous Rejections

2. All previous rejections are withdrawn in view of applicant's new claim amendments filed 11 March 2009.

New rejection grounds are established as follows based on different interpretation of Gervais US 5,160,381(Gervais).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 4-9, 12-13, 17-18 and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Gervais US 5,160,381(Gervais).

Gervais teaches a process for forming patina on copper, comprising:

- a) contacting the copper substrate with an aqueous solution comprising copper ions until obtaining a brownish color(i.e. patina)(col. 2 lines 52-68);
- b) curing the coated copper surface in a room at 25°C with a humidity of 50% for at least 12 hrs(col. 3 lines 1-10);
- c) thoroughly washing the coated copper substrate(col. 3 lines 11-12);
- d) applying another copper ion containing solution to the copper surface(col. 3 lines 15-20); and
- e) curing the coated copper substrate in the room as defined in b) for 2-4 hrs(col. 3 lines 38-40).

Regarding claim 1, the first coating step a) that produces a brownish color on the copper surface as taught by Gervais reads on the claimed patination solution treatment step. The curing step b) as taught by Gervais reads on the claimed article resting step at a first rest temperature and a first rest atmospheric humidity for a first rest time. The washing step c) as taught by Gervais inherently has an irrigation temperature and an irrigation atmospheric humidity for an irrigation time as claimed. The second curing step e) as taught by Gervais reads on the claimed article resting step at a second rest temperature and a second atmospheric humidity for a second rest time. The room wherein the curing of Gervais' coated copper substrate is cured reads on the claimed temperature- and humidity-controlled chamber.

Even though Gervais does not explicitly teach that the washing step is also taking place in the temperature- and humidity-controlled chamber, one of ordinary skill in the art would have found it obvious to have washed the coated copper substrate in the process of Gervais in the same room wherein the curing is taking place in order to simplify the coating process by avoiding transporting the coated copper substrate between process steps.

Regarding claims 4-8, the first and second curing steps and the washing step as taught by Gervais occur at temperatures, humidity levels and time durations that fall within the claimed temperature, humidity and time duration ranges.

Regarding claim 9, Gervais teaches in step a) that 563g of copper sulfate and 12g of copper acetate are added to 4 liters of water(col. 2 lines 61-65), which is calculated to be about 144g/l of copper salt in the treatment solution, which falls within the claimed copper salt concentration.

Regarding claim 12, Gervais further teaches the addition of chloride and carbonates(col. 3 lines 29-34).

Regarding claim 13, Gervais further teaches the claimed cleaning pre-treatment (col. 2 lines 1-4).

Regarding claim 17(i.e. corresponding to currently amended claim 16), even though Gervais does not explicitly teach the claimed treatment temperature, one of ordinary skill in the art would have found it obvious to have treated the copper substrate in the process of Gervais in the same room wherein the curing is taking place in order to simplify the coating process by avoiding transporting the coated copper substrate

between process steps. In addition, the preferred temperature range of the room as taught by Gervais is about 20-35°C, which overlaps the claimed temperature of 30-70°C. Therefore, a *prima facie* case of obviousness exists. See MPEP 2144.05.

Regarding claim 18(i.e. corresponding to currently amended claim 17), Gervais further teaches that the patination step can be repeated(col. 3 lines 20).

Regarding claim 20, the copper substrate as taught by Gervais reads on the claimed shaped part based on the broadest reasonable interpretation.

5. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gervais, and further in view of JP 2003-089880(JP'880).

The teachings of Gervais are discussed in paragraph 4 above. However, Gervais does not teach the claimed zinc salt in the patination solution.

JP'880 teaches a process for patinating copper articles comprising treating the copper article with a patination solution comprising cupric chloride, zinc chloride and sodium chloride(abstract). JP'880 further teaches, in Example 1, that copper substrate is treated with the patination solution and kept in the atmosphere having humidity of 50-70% and temperature of 20-30°C (paragraph 0010).

Regarding claims 10-11, it would have been obvious to one of ordinary skill in the art to have incorporated the patination solution of JP'880 into the first treatment solution in step a) of Gervais in order to form artificial patina with ease and safety as taught by JP'880(paragraph [0015]). In addition, although Example 2 of JP'880 teaches a patination solution comprising zinc chloride in a concentration that is higher than the

claimed concentration, one of ordinary skill in the art would have found it obvious to have varied the amount of zinc chloride in the patination solution of Gervais in view of JP'880 via routine optimization in order to achieve desired coating properties such as color and brightness.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gervais, and further in view of Loyer et al. US 4,416,940(Loyer).

The teachings of Gervais are discussed in paragraph 4 above. However, Gervais does not explicitly teach the claimed surface after treatment as claimed.

Loyer teaches a two step coating process to produce a patina coating wherein a transparent top coat is applied after the patination base coat in order to have a copper metallic appearance when viewed by reflected light and a patina appearance by transmitted light(col. 4 lines 34-51).

Regarding claim 19(i.e. corresponding to currently amended claim 18), it would have been obvious to one of ordinary skill in the art to have incorporated the application of top coat as taught by Loyer into the process of Gervais in order to have a copper metallic appearance when viewed by reflected light and a patina appearance by transmitted light as taught by Loyer.

7. Claims 1, 4-9, 12-13, 17-18 and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Gervais US 5,160,381(Gervais) and further in view of WO 95/29207 (WO'207).

Gervais teaches a process for forming patina on copper, comprising:

- a) applying a copper ion containing patination solution to the copper surface(col. 3 lines 15-20); and
- b) curing the coated copper surface in a room at 25°C with a humidity of 50% for 2-4 hrs(col. 3 lines 1-10 and 38-40);

Regarding claim 1, the coating step a) that produces a patina on the copper surface as taught by Gervais reads on the claimed patination solution treatment step. The curing step b) as taught by Gervais reads on the claimed article resting step at a first rest temperature and a first rest atmospheric humidity for a first rest time.

In addition, Gervais teaches that the application of patination solution may be repeated if desired(col. 3 lines 20-22), which implies the repeated patination solution application steps and repeated curing steps.

However, Gervais does not explicitly teach the washing step after curing.

WO'207 teaches a process for producing artificial patina on copper during which the copper surface is aged in humidity controlled environment after a patination solution is applied, followed by surface washing. WO'207 further teaches that this process is repeated multiple times to give desired surface patination(Pages 11-12, Examples 6-7).

Regarding claim 1, it would have been obvious to one of ordinary skill in the art to have incorporated the repeated curing and washing steps as taught by WO'207 into the process of Gervais in order to achieve desired surface patination as taught by WO'207.

In addition, even though Gervais in view of WO'207 do not explicitly teach that the washing step is also taking place in the room that is temperature- and humidity-

controlled, one of ordinary skill in the art would have found it obvious to have washed the coated copper substrate in the process of Gervais in view of WO'207 in the same room wherein the curing is taking place in order to simplify the coating process by avoiding transporting the coated copper substrate between process steps.

Regarding claims 4-8, the first and second curing steps and the washing step as taught by Gervais occur at temperatures, humidity levels and time durations that fall within the claimed temperature, humidity and time duration ranges.

Regarding claim 9, Gervais teaches in step a) that 563g of copper sulfate and 12g of copper acetate are added to 4 liters of water(col. 2 lines 61-65), which is calculated to be about 144g/l of copper salt in the treatment solution, which falls within the claimed copper salt concentration.

Regarding claim 12, Gervais further teaches the addition of chloride and carbonates(col. 3 lines 29-34).

Regarding claim 13, Gervais further teaches the claimed cleaning pre-treatment (col. 2 lines 1-4).

Regarding claim 17(i.e. corresponding to currently amended claim 16), even though Gervais in view of WO'207 do not explicitly teach the claimed treatment temperature, one of ordinary skill in the art would have found it obvious to have treated the copper substrate in the process of Gervais in view of WO'207 in the same room wherein the curing is taking place in order to simplify the coating process by avoiding transporting the coated copper substrate between process steps. In addition, the preferred temperature range of the room as taught by Gervais is about 20-35°C, which

overlaps the claimed temperature of 30-70°C. Therefore, a *prima facie* case of obviousness exists. See MPEP 2144.05.

Regarding claim 18(i.e. corresponding to currently amended claim 17), Gervais further teaches that the patination step can be repeated(col. 3 lines 20).

Regarding claim 20, the copper substrate as taught by Gervais reads on the claimed shaped part based on the broadest reasonable interpretation.

8. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gervais in view of WO'207, and further in view of JP 2003-089880(JP'880).

The teachings of Gervais in view of WO'207 are discussed in paragraph 7 above. However, Gervais in view of WO'207 do not teach the claimed zinc salt in the patination solution.

JP'880 teaches a process for patinating copper articles comprising treating the copper article with a patination solution comprising cupric chloride, zinc chloride and sodium chloride(abstract). JP'880 further teaches, in Example 1, that copper substrate is treated with the patination solution and kept in the atmosphere having humidity of 50-70% and temperature of 20-30°C (paragraph 0010).

Regarding claims 10-11, it would have been obvious to one of ordinary skill in the art to have incorporated the patination solution of JP'880 into the first treatment solution in step a) of Gervais in view of WO'207 in order to form artificial patina with ease and safety as taught by JP'880(paragraph [0015]). In addition, although Example 2 of JP'880 teaches a patination solution comprising zinc chloride in a concentration that is

higher than the claimed concentration, one of ordinary skill in the art would have found it obvious to have varied the amount of zinc chloride in the patination solution of Gervais in view of WO'207 and JP'880 via routine optimization in order to achieve desired coating properties such as color and brightness.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gervais in view of WO'207, and further in view of Loyer et al. US 4,416,940(Loyer).

The teachings of Gervais in view of WO'207 are discussed in paragraph 7 above. However, Gervais in view of WO'207 do not explicitly teach the claimed surface after treatment as claimed.

Loyer teaches a two step coating process to produce a patina coating wherein a transparent top coat is applied after the patination base coat in order to have a copper metallic appearance when viewed by reflected light and a patina appearance by transmitted light(col. 4 lines 34-51).

Regarding claim 19(i.e. corresponding to currently amended claim 18), it would have been obvious to one of ordinary skill in the art to have incorporated the application of top coat as taught by Loyer into the process of Gervais in view of WO'207 in order to have a copper metallic appearance when viewed by reflected light and a patina appearance by transmitted light as taught by Loyer.

10. Claims 1, 4-9, 12-13, 17-18 and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Fukawa et al. US 3,669,766 (Fukawa).

Fukawa et al. US 3,669,766 teaches a patination process during which a patination solution(i.e. liquor C) is applied at normal temperature and dried naturally at a humidity from 50 to 90% at a temperature from 5-35°C(col. 4 lines 42-75). Fukawa further teaches that the application of the patination solution can be repeated and washing of treated plate with water is preferred(col. 4 lines 70-75).

Regarding claim 1, the coating step taught by Fukawa reads on the claimed patination solution treatment step. The drying step as taught by Fukawa reads on the claimed article resting step at a first rest temperature and a first rest atmospheric humidity for a first rest time. The washing step as taught by Fukawa inherently has an irrigation temperature and an irrigation atmospheric humidity for an irrigation time as claimed. The drying step after repeated application of patination solution as taught by Fukawa reads on the claimed article resting step at a second rest temperature and a second atmospheric humidity for a second rest time.

Even though Fukawa does not explicitly teach that its process occurs in a temperature- and humidity- controlled chamber, one of ordinary skill in the art would have found it obvious to have carried out the process of Fukawa in a temperature- and humidity- controlled room in order to maintain the temperature and humidity required in the coating and drying steps of Fukawa.

Regarding claims 4-8, the first and second drying steps and the washing step as taught by Fukawa occur at temperatures, humidity levels and time durations that fall within the claimed temperature, humidity and time duration ranges.

Regarding claim 9, Fukawa teaches that 100g of copper nitrate is added to one liter of water(col. 4 lines 52-58), which falls within the claimed copper salt concentration.

Regarding claim 12, Fukawa further teaches the addition of chloride(col. 4 line 53-54).

Regarding claim 13, Fukawa further teaches the claimed cleaning pre-treatment (col. 4 lines 58-59).

Regarding claim 17(i.e. corresponding to currently amended claim 16), Fukawa further teaches that the patination treatment takes place at normal temperature(col. 4 lines 65-66), which overlaps the claimed temperature of 30-70°C. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05.

Regarding claim 18(i.e. corresponding to currently amended claim 17), Fukawa further teaches that the patination step can be repeated(col. 4 lines 70-71).

Regarding claim 20, the copper substrate as taught by Fukawa reads on the claimed shaped part based on the broadest reasonable interpretation.

11. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukawa, and further in view of JP 2003-089880(JP'880).

The teachings of Fukawa are discussed in paragraph 10 above. However, Fukawa does not teach the claimed zinc salt in the patination solution.

JP'880 teaches a process for patinating copper articles comprising treating the copper article with a patination solution comprising cupric chloride, zinc chloride and sodium chloride(Abstract). JP'880 further teaches, in Example 1, that copper substrate

is treated with the patination solution and kept in the atmosphere having humidity of 50-70% and temperature of 20-30°C (paragraph 0010).

Regarding claims 10-11, it would have been obvious to one of ordinary skill in the art to have incorporated the patination solution of JP'880 into the first treatment solution in step a) of Fukawa in order to form artificial patina with ease and safety as taught by JP'880(paragraph [0015]). In addition, although Example 2 of JP'880 teaches a patination solution comprising zinc chloride in a concentration that is higher than the claimed concentration, one of ordinary skill in the art would have found it obvious to have varied the amount of zinc chloride in the patination solution of Fukawa in view of JP'880 via routine optimization in order to achieve desired coating properties such as color and brightness.

12. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukawa, and further in view of Loyer et al. US 4,416,940(Loyer).

The teachings of Fukawa are discussed in paragraph 10 above. However, Fukawa does not explicitly teach the claimed surface after treatment as claimed.

Loyer teaches a two step coating process to produce a patina coating wherein a transparent top coat is applied after the patination base coat in order to have a copper metallic appearance when viewed by reflected light and a patina appearance by transmitted light(col. 4 lines 34-51).

Regarding claim 19(i.e. corresponding to currently amended claim 18), it would have been obvious to one of ordinary skill in the art to have incorporated the application

of top coat as taught by Loyer into the process of Fukawa in order to have a copper metallic appearance when viewed by reflected light and a patina appearance by transmitted light as taught by Loyer.

Response to Arguments

13. Applicant's arguments filed 11 March 2009 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LOIS ZHENG whose telephone number is (571)272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Wyszomierski/
Primary Examiner
Art Unit 1793

LLZ